

ABSTRACT OF THE DISCLOSURE

The present invention provides fluorescence-based real-time PCR assays for the rapid detection of single nucleotide polymorphisms (SNPs). The genotyping assay can be used to detect SNPs of a number of genes of interest that include, but are not limited to, the human multidrug resistance gene (*MDR1*) single nucleotide polymorphisms C3435T and G2677T, and cytochrome P-450 3A5 single nucleotide polymorphisms CYP3A5*3 (A22893G) and CYP3A5*6 (G30597A).